

# TESC19 – Call for Participation

IEEE PES and the GridWise Architecture Council

In its 6<sup>th</sup> year, the International Transactive Energy Systems Conference and Workshop will now be hosted by GWAC and IEEE PES as the 2019 IEEE PES Transactive Energy Systems Conference (#TESC19). This conference will help further develop the transactive energy model and examine the policy and technology changes necessary to implement and enable the advancement of transactive energy systems. The theme of TESC2019 will be: “Transactive Energy Systems in a Participatory Grid - A Framework for the Future.”

## Overview

The century-old paradigm of large-scale generation and one-way distribution is being disrupted as dispersed renewable and other distributed resources are making an increasing impact. The electric industry is on the threshold of transitioning from a “load following” paradigm, where central generation adjusts to varying demand, to a “supply following” paradigm, where responsive demand and storage absorb more variable generation such as solar and wind. Transactive energy systems enable a participatory approach to help manage and mitigate the system impacts of these changes to the benefit of consumers, prosumers, and grid operators.

Transactive energy systems can create the capabilities for customers, third parties, and system operators to buy and sell energy and services with each other, based on economic valuation of benefits (such as societal and environmental). Successful implementation of these capabilities will require cost-effective, highly automated systems.

Customer ease-of-use will be especially important since the residential customer class represents a large untapped potential for growing demand response and expanding the utilization and effectiveness of transactive energy systems. A customer should be able to participate by responding to operational and market signals in an automated fashion without having to understand the theory and details of the underlying transactive energy system and policy needs to support these systems. Increased electric system flexibility will be paramount both to enable and manage such increased customer participation and responsiveness. Transactive energy systems can provide that needed flexibility.

## Call for Participation

The IEEE PES in partnership with the GridWise® Architecture Council (GWAC) will convene the IEEE PES Transactive Energy Systems Conference (#TESC19) on July 8-10, 2019, in Minneapolis, MN at the University of Minnesota. The theme for this year’s Conference is “Transactive Energy Systems in a Participatory Grid - A Framework for the Future.”

The conference will have a number of panel sessions and a single poster session. Abstracts of **no longer than 500 words** should be submitted for consideration in the panel sessions. Papers formatted in accordance with PES requirements (<https://www.ieee-pes.org/templates-and-sample-of-pes-technical-papers>) should be submitted and will be reviewed for inclusion in the poster session. Both panel presentation abstracts and papers should be submitted to the following email address no later than March 31, 2019:



Power & Energy Society®

[gridwiseac.coordinator@pnnl.gov](mailto:gridwiseac.coordinator@pnnl.gov). Submittals should clearly indicate the Transactive Energy topic category (see below) with which the submittal is aligned.



The abstracts or papers are being sought to address all aspects of transactive energy systems with a focus on how to create a framework for a future participatory grid. **The submittals should clearly indicate for which topic they are intended.** The topic categories are:

- **Regulatory and Policy**  
This topic addresses the state of legislation and regulation currently existing to support transactive energy and limitations to transactive implementations today. What changes are needed and what should the industry do to encourage alignment of policy and regulatory measures to create a more flexible and interactive grid?
- **Business Models and Value Realization**  
This topic will discuss where early transactive pilots have been implemented and their drivers. What does it take to create value for participants and where should the focus be for the next transactive implementations?
- **System Design and Architecture**  
This topic will discuss the steps needed to support the transition from a centralized to a decentralized grid based on highly coordinated self-optimization and which features integration with water and gas through smart buildings and smart cities.
- **Physical & Cyber Technologies and Infrastructure**  
This topic will discuss the interdependence of the electric grid and the communication networks that are necessary to monitor and coordinate actions on the grid and how to build explicit, well-defined, trust models that define identity, authentication, service-level agreements, and privacy into TE systems.
- **Resilience**  
There are qualities of the power system that by their nature improve the resilience of the system and these qualities may be provided by transactive or non-transactive systems. This topic will focus on the resilience benefits that a flexible and adaptive grid can provide by incorporating transactive systems.
- **Visions for Participation**  
This topic will discuss visions for a future-state grid with many transactive systems that include buildings, microgrids, campuses, smart cities and active residential participation.

Depending on the number of submissions, there may be more than one panel session for a given topic.

Each panel session will be followed by a corresponding workshop session.

There will also be four tutorials on transactive energy related topics on the day preceding the conference.